

Application No. 09/901,804
Reply to Office Action dated June 15, 2005

IN THE CLAIMS:

Please AMEND the claims as indicated in the listing of claims below. This listing of claims will replace all prior versions of the claims in the Pending Application. The claims are marked to indicate the changes made with deletions indicated by strikethroughs and additions indicated by underlining.

1. (Cancelled)
2. (Currently amended) A universal meta model for creating tools for other meta models, the universal meta model implemented on a computer readable medium or in computer memory and comprising:
 - a. means for representing a plurality of classes of objects;
 - b. means for representing a plurality of default class behavior categories;
 - c. means for representing a plurality of data members of classes of objects;
 - d. means for representing a plurality of default member behavior categories;
 - e. means for representing a plurality of varied and unanticipated composite relationships between classes of objects;
 - f. means for representing a plurality of relationships between objects;
 - g. means responsive to at least one of a-f for representing edit-time data formations and validation constraints thereon;
 - h. means for receiving a plurality of edit commands; and
 - i. means for interpreting said edit commands, identifying valid edit commands, and executing said valid edit commands to alter said data formations in conformance with the validation constraints of said universal meta model ~~such that editing, testing, and execution environments can be created for independently conceived meta models.~~
3. (Original) A universal meta model as in claim 2 comprising means for representing a plurality of optional additional class behaviors for a plurality of class behavior categories.

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4. (Original) A universal meta model as in claim 2 comprising means for representing a plurality of optional additional member behaviors for a plurality of member behavior categories.

5. (Original) A universal meta model as in claim 2 comprising means for representing a plurality of links between relationships between classes of objects.

6. (Original) A universal meta model as in claim 5 comprising means for representing a plurality of composite relationships composed of a plurality of links between a plurality of relationships between classes of objects.

7. (Cancelled)

8. (Original) A universal meta model as in claim 5 comprising means for representing direction of relation links.

9. (Original) A universal meta model as in claim 2 comprising means for representing a plurality of default relationship behavior categories.

10. (Original) A universal data editor component comprising

- a. a universal meta model as in claim 2;
- b. means for storing data instantiations of said universal meta model classes;
- c. means for storing data instantiations of said universal meta model members;
- d. means for storing data instantiations of said universal meta model relations; and
- e. means for storing data instantiations of said universal meta model relation links.

11. (Previously presented) A universal data editor component as in claim 10 comprising

- a. means for storing data instantiations of said universal meta model tree views; and
- b. means for storing data instantiations of said universal meta model tree levels.

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12. (Previously presented) A universal data editor component as in claim 10 comprising

- a. means for storing data instantiations of said universal meta model elements representing instantiations of classes represented by said universal meta model classes; and
- b. means for storing data instantiations of said universal meta model values representing instantiations of said universal meta model members.

13. (Cancelled)

14. (Previously presented) A viewer and controller for universal data editor component comprising

- a. a universal data editor component as in claim 10;
- b. means for displaying a graphical representation of data;
- c. means for displaying textual representation of data; and
- d. means for displaying tabular representation of data.

15. (Previously presented) A viewer and controller for universal data editor component as in claim 14 comprising

- a. means for displaying a graphical representation of data formations;
- b. means for displaying textual representation of data formations; and
- c. means for displaying tabular representation of data formation.

16. (Cancelled).

17. (Currently amended) A universal meta model for creating tools for other meta models, the universal meta model implemented on a computer readable medium or in computer memory, and comprising:

- a. means for representing a plurality of classes of objects;
- b. means for representing a plurality of default class behavior categories;
- c. means for representing a plurality of data members of classes of objects;
- d. means for representing a plurality of default member behavior categories;

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e. means for representing a plurality of virtual recursive relationships between classes of objects;

f. means for representing virtual recursive relationships between objects;

g. means responsive to at least one of a-f for representing edit-time data formations and virtual recursive validation constraints thereon;

h. means for receiving a plurality of edit commands; and

i. means for interpreting said edit commands, identifying valid edit commands, and executing said valid edit commands to alter said data formations in conformance with said virtual recursive constraints of said universal meta model ~~such that editing, testing, and execution environments can be created for independently conceived meta models.~~

18. (Currently amended) A universal meta model for creating tools for other meta models, the universal meta model implemented on a computer readable medium or in computer memory, and comprising:

a. means for representing a plurality of classes of objects;

b. means for representing a plurality of default class behavior categories;

c. means for representing a plurality of data members of classes of objects;

d. means for representing a plurality of default member behavior categories;

e. means for representing a plurality of varied and unanticipated distant virtual recursive relationships between classes of objects;

f. means for representing distant virtual recursive relationships between objects;

g. means responsive to at least one of a-f for representing edit-time data formations and distant virtual recursive validation constraints thereon;

h. means for receiving a plurality of edit commands; and

i. means for interpreting said edit commands, identifying valid edit commands, and executing said valid edit commands to alter said data formations in conformance with said distant virtual recursive constraints of said universal meta model ~~such that editing, testing, and execution environments can be created for independently conceived meta models.~~

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19. (Previously presented) The method as recited in claim 18, further comprising
- a. receiving a representation of a CanDrop edit request comprising a drag source representative of a first object and a drop target representative of a second object
 - b. determining validity of said CanDrop edit request by interpreting i) a meta model; ii) a plurality of instantiations of meta model data including composite relationships; and iii) a plurality of instantiated edit time data;
 - c. means for executing valid edit commands to alter said data formations in conformance with constraints of said meta model; and
 - d. means for returning a signal in response to invalid edit commands indicative of basis for such invalidity such that editing, testing, and execution environments can be created for independently-conceived meta models.